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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,593	02/14/2002	Yinan Wu	10559-684001 / P13288	1555
20985	7590	12/14/2004	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			VIGUSHIN, JOHN B	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,593	WU ET AL.	
	Examiner	Art Unit	
	John B. Vigushin	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 9-24 and 27-31 is/are allowed.
- 6) ☒ Claim(s) 25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1104/12 Nov 2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on November 12, 2004 has been entered.

Specification

2. The disclosure is objected to because of the following informalities:

On p.5, line 5: "5" should be changed to --4--; and "6" should be changed to --5--.

On p.5, line 6: "6" should be changed to --5--.

On p.7, line 16: "electrometrically" should be changed to --electromagnetically--.

On p. 9, line 12: "122" should be changed to --124--; "132" should be changed to --134--; and "142" should be changed to --144--.

On p.9, line 13: "122" should be changed to --124--; "132" should be changed to --134--; and "142" should be changed to --144--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being obvious over Marketkar et al. (US 2001/0024888 A1) in view of Ishibashi et al. (US 6,163,464).

[Examiner's Note: the above-cited references have been previously made of record in the instant Application].

The applied reference (Marketkar et al.) has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of

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this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

A) As to Claim 25:

I. Marketkar et al. (US 2001/0024888 A1) discloses mounting sockets 700 on a circuit board at locations of electromagnetic bus couplers (Figs. 1, 2, 13 and 14) using a force (lines 1-9 or paragraph [0102]) that inherently causes the viscous material--placed in the gap between surface 355 of the electromagnetic bus coupler 354 and surface 301 of the backplane (i.e., motherboard) circuit board 300 (Figs. 4 and Figs. 13-16; paragraph [0064])--to be squeezed and to flow to fill air gaps between sockets 700 and backplane circuit board 300. Examiner's remarks on the inherency. The force from the sockets 700 comprises the force exerted on flexible electromagnetic coupler 354 against circuit board 300 by latches 734 and 744 (Figs. 13-16 and lines 5-6 of paragraph [0102]), and with the viscous material placed in the gap between surface 355

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of coupler 354 and surface 301 of backplane circuit board 300 (paragraph [0064]), that force inherently causes the viscous material to be squeezed and to flow to fill air gaps between the sockets 700 and backplane circuit board 300. Marketkar et al. further discloses populating circuit board 300 with a memory controller—for electronically managing circuit boards 352 when circuit boards 352 are memory modules—coupled to a bus served by the electromagnetic bus couplers (Figs. 1, 2 and 13; paragraphs [0035] and [0046]).

II. Marketkar et al. does not teach that any of devices 120, 130 and 140 of Figs. 1 and 2 (manifested in the memory module boards 352 of Figs. 13 and 14) mounted on backplane circuit board 300, or any other circuit components that may also be mounted to backplane circuit board 300, may be a processor coupled to the bus served by the electromagnetic bus couplers 354.

III. Ishibashi et al. (US 6,163,464) discloses circuit boards 5a-f mounted to backplane board 1 through connectors 6a-f, wherein circuit boards 5a-f not only may include a memory board but also include a processor board (col.3: 29-31) for performing the data processing functions.

IV. Since both Marketkar et al. and Ishibashi et al. disclose an electronic system wherein circuit boards that perform electronic functions are mounted to a backplane through connectors, then including a processor board among the functional boards for performing the data processing functions, as taught by Ishibashi et al., would have been readily recognized in the pertinent art of Marketkar et al.

V. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount various types of functional boards to the bus on the backplane board in the electronic system of Marketkar et al., including a processor board, as taught by Ishibashi et al., coupled to the bus served by the electronic bus couplers in order to perform the data processing in the electronic system of Marketkar et al.

B) As to Claim 26, modified Marketkar et al. further discloses that among the circuit boards 352 inserted into sockets 700 are memory modules (paragraphs [0035] and [0046]), which are art-recognized digital devices.

Allowable Subject Matter

6. Claims 1-7, 9-24 and 27-31 have been allowed.

7. The following is an examiner's statement of reasons for allowance:

A) As to Claims 1-7 and 9-15, patentability resides in the combination of: *a connector configured for insertion and removal of a digital device, a first electromagnetic coupler being connected to at least one of the contacts of the connector, the connector comprising a rigid coupling element, and the first electromagnetic coupler being on a surface of the rigid coupling element*, in further combination with the other limitations of base Claim 1:

(i) Knight et al. (WO 00/72163 A1) discloses, in Figs. 14A,B,C,D, 15 and 16A,B, a flex or rigid-flex electromagnetic coupler to which a digital device is connected (all of p.17 and first paragraph of p.18). Knight et al. does not teach a

connector configured for insertion and removal of a digital device and an electromagnetic coupler connected to contacts of that insertion/removal connector; rather, the electromagnetic coupler, itself, serves as both connector and electromagnetic coupler (i.e., a digital device interface) to which the digital device is directly connected by unspecified means, wherein no teaching or suggestion is made of a distinct insertion/removal connector structure with contacts and an electromagnetic coupler connected to those contacts (p.17, last paragraph; p.18, line 11-p.19, line 7).

(ii) Marketkar et al. (US 2001/0024888 A1) discloses, in Figs. 13-16: a socket connector 700 configured for insertion and removal of a digital device 352 having contacts 750 and 760 arranged to make electrical connection to conductors 581-584 on digital device 352; a flexible electromagnetic coupler 354 (paragraph [0090]) with coupler traces on surface for electromagnetically coupling the coupler traces on circuit board 300. The first electromagnetic coupler 354 is not connected to at least one of the contacts 750, 760 of the connector 700 (Figs. 14-16; paragraphs [0088]-[0090]).

B) As to Claims 16-20, patentability resides in *sockets having rigid electromagnetic couplers*, in combination with the other limitations of base Claim 16.

C) As to Claims 21-22, patentability resides in *sockets having rigid electromagnetic couplers*, in combination with the other limitations of base Claim 21.

D) As to Claims 23-24, patentability resides in *coupling, at locations along the bus, the digital signals to sockets through rigid electromagnetic couplers*, in combination with the other limitations of base Claim 23.

(i) Williamson (US 6,111,476) discloses all the limitations of Claim 23 (col.3: 4-32) but does not teach the specific material composition or mechanical properties of the electromagnetic couplers 30A-N; i.e., does not teach that the electromagnetic couplers are rigid.

(ii) Williamson, in col.1: 29-37, cites De Veer (US 3,619,504) who teaches a similar electromagnetic bus coupling system with electromagnetic couplers C1-C4 (col.2: 50-51) but also does not teach the specific material composition or mechanical properties of the couplers C1-C4.

(iii) De Veer, in col.2: 50-54, teaches that couplers C1-C4 may be of the type taught by Bolt et al. (US 3,516,065) but Bolt et al. does not teach the couplers as specifically rigid structures (see Bolt et al., col.2: 30-49 and col.4: 68-72). Williamson (US 6,111,476) teaches that the electromagnetic couplers 30A-N may occupy slots in the backplane (col.3: 6-8). However, the prior art of record—including, e.g., Marketkar et al. (US 2001/0024888 A1) and Knight et al. (WO 00/72163 A1)—suggests that the electromagnetic couplers derive functional benefit from being made of flexible circuit board material (see Marketkar et al., paragraph [0047] and lines 1-6 of paragraph [0102]; and Knight et al., WO/72163 A1, first paragraph on p.17 and first paragraph on p.18), and Marketkar et al., in particular, incorporates the flexible coupler into a coupler region (structural

opening 715) of socket 700 (Figs. 13-16 and paragraph [0102]). The flexible material allows for mechanical misalignment and imperfection between coupler and backplane circuit board (Knight et al., p.17, first paragraph and p.18, first paragraph), and the flexibility of the material permits various shapes and configurations of the coupler that provide packaging options not available with a rigid material. (Marketkar et al., Figs. 13 and 14).

(iv) Hence, the above-cited reason for allowance of Claims 23-24.

E) As to Claims 27-31, patentability resides in a first electromagnetic coupler connected to at least one of the contacts of the connector, in combination with the other limitations of base Claim 27. Marketkar et al. (US 2001/0024888 A1) discloses all but one of the limitations of the claim, including a viscous liquid on the first electromagnetic coupler 354 (Figs. 13-16; paragraph [0064]), but does not teach the one limitation that the first electromagnetic coupler 354 is connected to at least one of the contacts 750, 760 of socket connector 700; rather, first electromagnetic coupler 354 is held within the coupler region 715 of socket connector 700 to align the electromagnetic coupler 354 with circuit board 300 (Figs. 14-16; paragraphs [0088]-[0090]).

8. All prior art cited and discussed in section 7, above, has previously been made of record in the present Application, either by the Examiner or the Applicant, except for Bolt et al. (US 3,516,065), cited for the first time by the Examiner in section 7, D(iii), above, of the present Office Action.

9. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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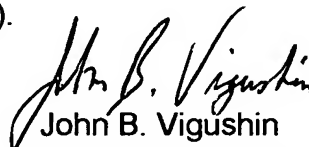
accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Vigushin whose telephone number is 571-272-1936. The examiner can normally be reached on 8:30AM-5:00PM Mo-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John B. Vigushin
Primary Examiner
Art Unit 2841

jbv
December 08, 2004